

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XCIX. — THURSDAY, JULY 25, 1878. — NO. 4.

THE CAUSATION OF TYPHOID FEVER.¹

BY GEORGE E. WARING, JR., NEWPORT, R. I.

LIEBERMEISTER says that typhoid dejections, conveyed in night-soil spread as manure upon the gathering ground of an aqueduct, so contaminated the water supply as to produce an epidemic of typhoid fever among the population using the water.

Similar instances might be cited almost without number. Indeed, there is among investigators no difference of opinion as to the communication of the disease by means of drinking-water thus polluted. There are many instances recorded of the contamination of the water of wells by the transmission of fecal matters through the soil from adjacent privy vaults and cess-pools. One of the most striking of these is that of an outbreak in the village of New Boston, in Erie County, N. Y., in 1843, investigated and reported upon by Dr. Austin Flint, Sr. From its early date this case is worthy of description here. No case of typhoid fever had ever been known in the county. The community numbered forty-three persons; twenty-eight of these were attacked with fever, and ten died. All of those affected obtained their drinking-water from a well adjoining the tavern; but one family, living in the midst of the infected neighborhood, owing to a feud with the tavern-keeper, did not drink this water, and escaped infection. Two families lived too far away to use this well. This immunity on the part of the enemy of the tavern-keeper led to a charge that he had maliciously poisoned the well, — a charge which resulted in a suit for slander and the payment of one hundred dollars damages. At that time the idea that typhoid fever might be communicated by infected drinking-water had not been advanced; but its truth receives strong confirmation from the fact that a passenger, coming from a town in Massachusetts where typhoid prevailed, and traveling westward in a stage-coach, having been taken ill, was obliged to stop at this tavern. Twenty-eight days after his arrival he died of typhoid fever, and thus, doubtless, transmitted in some way to the water of this well the germs of the disease, which speedily attacked every family in the town except the three which did not resort to it for their supply.

¹ Concluded from page 71.

Not only does water itself serve as the direct vehicle of contagion, but it has, in several striking instances, caused the serious contamination of milk which had been directly diluted by it, or which had been stored or carried in vessels washed with it. The most noteworthy of the reported cases of this character is that of an outbreak in Marylebone and the adjoining parts of London, reported by Radcliffe in the second number of the new series of reports of the medical officer of the privy council. Two hundred and forty-four cases were distributed through one hundred and forty-three households. There was at that time no corresponding increase in neighboring districts, and the metropolis generally was unusually free from typhoid. The conclusions arrived at were the following: (1) the outbreak was caused by milk infected with enteric fever material; (2) this milk came from a particular farm; (3) the water used for dairy purposes on this farm contained excremental matters from a patient suffering from enteric fever immediately before and at the time of the outbreak. Of one hundred and ninety-one cases occurring in nine weeks, one hundred and sixty-seven were in households taking this milk, and only twenty-four in households not taking it.

All evidence points to the long vitality of the infecting material, which lies dormant at times for many months, and then, under favorable circumstances, acts with violence.

Not only does the infection follow the course of water to which it has gained access, or find its means of dissemination in the exhalations of decomposing filth, and thus contaminate the air which we breathe, but these exhalations are readily absorbed by water, which is capable of holding the poison, to the detriment of those who may drink it, and of transmitting it again to air with which it may be in contact. Many cases have been reported similar to that cited by Dr. Carpenter, health officer of Croydon, who traced the origin of an outbreak to the drinking of water from a house cistern, to which air from the public sewer had been led by the pipe serving as an overflow for the cistern.

Especial danger attaches to the use of water-traps, or water held in the bends of waste-pipes, soil-pipes, etc., when these are the only barrier between the interior of the house and a sewer or cess-pool containing typhoid dejections. The retained water absorbs the poison at its outer or sewer end, becomes saturated with it, and gives it off to the air in the house end of the pipe.

The conclusion from the foregoing is clearly this: that the dejections of typhoid patients are always to be regarded as dangerous material, capable of developing and spreading the fatal infection under a great variety of conditions; that the only sure means for preventing the spread of the disease must be sought either in the speedy, complete, and distant removal of the material, or in its complete disinfection.

If to be retained in the vicinity of human habitations, it must be disinfected, or subjected to decomposition, under such conditions that its poisonous material shall be destroyed; if to be removed, it must be removed to a point beyond the reach of the community, and to a point where it can in no wise contaminate the source from which drinking-water is taken.

The contagium of typhoid fever is not a poison in the sense in which strychnine and arsenic are poisons,—attacking alike each body into which it may be introduced,—but, like the contagium of other diseases of its class, it depends upon a certain condition of susceptibility on the part of the subject. This infection, like many others, is inoperative except upon a system prepared to receive it. In other words, we must have not only the seed but also the soil. In discussing the causation of this disease with the practical object of seeking the means for its prevention, we have to regard not only the source of the contagium, the vehicles of its transmission, and the method of its attack, but in almost equal degree those influences which tend to dispose the human body to succumb. This double condition (that there must be, if not absolutely always, at least very generally, an actual element of contagion, whether germ or specific poison, and also that there must be a state of susceptibility on the part of the subject) greatly improves our chances of success in contending with the disease. We know where the morbid material resides, and so are enabled to avert its approach; and, on the other hand, we know what conditions of living induce the susceptibility, and so have it in our hands, by improving these conditions, to increase the power of resistance.

So far as the prevention of typhoid fever is concerned, aside from tonic medication, the means to be employed are of a purely hygienic character; it is a question of the skill of the practitioner as a sanitarian rather than as a physician. He has two objects to attain: first, the removal of the infecting cause; second, the provision of healthful conditions of living. If the theory is correct that, as Dr. Murchison supposes, typhoid fever may originate *de novo* from the decomposition of organic matter, then the two objects are to a certain extent blended, in so far as atmospheric conditions, which might induce susceptibility, are also capable of causing the disease. In effect, our practice will be safely guided if we regard the two objects as separate and distinct.

Starting with the proposition that typhoid fever is produced only by the operation of a specific cause borne in the dejections of typhoid patients; that it is innocuous when first voided, but becomes active after a certain exposure in the decomposing fæces; that it has great vitality; that it is capable of being carried by flowing water, by water percolating through the earth, and by the vapor of water floating in the air; that it may be absorbed and retained and exhaled by water; and

that it may be retained, developed, and transported by clothing and other articles soiled by its medium, we see that the greatest possible vigilance and the most skillful care are to be applied to the treatment of typhoid dejections. Some of the experiences of England indicate the truth of the statement of the Rivers Pollution Commissioners, that so far as the cause of infection is concerned "filters do not filter and disinfectants do not disinfect." It will at least be safe to assume that in the case of water-carriage the immediate distant removal and the most complete atmospheric exposure are much more effective than any treatment of sewage by the usual methods of filtration; also, that any attempt at chemical disinfection must be more than ordinarily thorough. There is reason to suppose — reason almost sufficient to secure reliability — that the poisonous element is developed and made effective only when the decomposition of the fæces containing it takes place in the absence of a supply of fresh air sufficient to carry it on in the most rapid and healthy way. In other words, active oxidation, whether produced by oxidizing disinfectants, by the operation of atmospheric oxygen, or by the intensified oxidizing power of the contained gases of porous material, seems to prevent decomposing fæces from assuming a condition favorable to the development of infection. The evidence in support of this theory is of course of a negative character, but it is extensive, and, so far as the writer knows, it is accepted by leading physiologists.

Typhoid fever is not produced by exhalations from the surface of lands irrigated with the discharge of such sewers as have a rapid and continuous flow, and thereby deliver all they receive before it has had time to undergo decomposition. There is no evidence that typhoid fever is caused by the contained air of thoroughly ventilated soil-pipes. The most active professional enemies of the earth-closet system have never adduced an instance where typhoid fever, or any other cognate disease, has followed its well-regulated use. In *The Lancet* of March 6, 1869, Professor Rolleston, setting forth his objections to the earth closet, said: "If I am told that the earth closet is inoffensive, and that the privy is foetid, I answer that a rattlesnake is none the less dangerous because its rattle is removed; and that, for anything shown or known to the contrary, odor is to infection, deodorization to disinfection, what the noise of the serpent is to its bite." It is nine years since this was written, and amid all the voluminous reports upon the dry-earth system there is no word to sustain Dr. Rolleston's fears. On the other hand, together with much else of similar purport, the evidence of Dr. Monat reports that in those jails of India where the earth system is used, even at the time of the most serious cholera epidemics, this disease, which is so like typhoid in its mode of transmission, never gains a foothold. One would almost be justified in replying to Professor Rolle-

ston, that it is not a question of removing the rattle, but of killing the snake. Investigations made to determine the manurial value of closet earth used many times over indicate a total and absolute destruction, not only of the odor but of the whole combustible material of the added fæces. The result has shown as complete destruction as would attend burning in a furnace.

This destructive oxidation depends upon the well-known concentration upon the surfaces of the interior particles of aerated porous substances. The intensity of the action is in proportion to the fineness of the material, or, in other words, to the total area of its interior surfaces.

It is perhaps not safe to assume that in dealing with such dangerous material as typhoid excreta treatment with dry earth, or ashes, or charcoal will suffice to render it harmless, but it will be more effective in this direction than anything else of which we have knowledge, and will at least prepare it for safe removal.

The physician in considering the treatment of the material in question has one of two sets of conditions to deal with. The fæcal wastes of the household which he is attending are either removed by water-carriage, or thrown into privy vaults. If by water-carriage, they are delivered into a public sewer or into a cess-pool. Sewers, as they usually exist, and cess-pools always and invariably, are so circumstanced as to favor the thorough development and multiplication of the morbid material under consideration. Unfortunately, sewers and cess-pools are so connected with the interiors of houses, with others as well as with that where the disease originated, as to make them too often the means for converting a sporadic case into a centre of infection. Even the house drains and soil-pipes through which the excrement passes on its way to the cess-pool or sewer are very generally as bad as these final receptacles themselves, while almost always the only barrier to the free return of their air and its poisonous freight into our very living rooms is the water retained by a depression in the pipe (the trap), which water constantly absorbs and transmits the gases presented to it.

Where these water barriers are supplemented with one of the many mechanical check valves recently introduced, this means for the return of the infection is shut off. Where the soil-pipe and drain are freely open at both ends for the transmission of a current of atmospheric air, the danger of the development of the poison is greatly reduced, if not entirely removed. But even here, although we may feel secure so far as the immediate household in question is concerned, it is to be remembered that, at least in the case of a public sewer and of a cess-pool common to several houses, the matter deposited may produce its injurious effect in other families which are less well protected against it. Even where the cess-pool is connected with one house only, to permit the specific poison of typhoid fever to enter it and to spread itself through its

accumulated filth is to incur a danger akin to that of establishing a gun-powder vault in one's back yard.

When infected fæces are to be thrown into a water-closet or drain they should at least be treated with the strongest and most destructive chemical disinfectants, carbolic acid being by no means sufficiently so.

When the fæces of the household are received in a privy vault, it must be accepted as an imperative rule that typhoid dejections must never, under any circumstances, find access to this. Abundant and conclusive evidence shows that such accumulations of fæces only await the introduction of the least germ of any diarrrhœal disease to become, by means of their exhalations and of their pollutions of the soil, active agencies of development.

Even when the earth-closet system is employed, none of the regular apparatus should be used by the patient, or become the receptacle of his dejections; this for the simple reason that it should be our first object to secure the most complete isolation of the tainted matter from every substance which might foster the increase of its tainting element.

It would be better, perhaps, to stop with this general statement of principles, leaving each practitioner to apply them according to his judgment, but one is tempted to recommend what one believes to be the most efficient process, and I therefore take the liberty of suggesting that a chamber or bed-pan, filled to the depth of an inch with dry earth, or with sifted anthracite ashes, or with powdered charcoal, be used to receive the evacuation; that this be immediately covered with a further inch in depth of dry material, and that the whole be turned into a *shallow* hole in the ground and covered with earth not more than two inches deep, so that it may go through with its decomposition in the upper soil within easy reach of the oxidizing air. If to be removed quite away from the premises, the earth containing the dejections may be thrown into a barrel or box, each deposit being covered with fresh earth, and *carefully protected against rain*.

It would be out of place here to enter into all the details of the hygienic law. In a paper written for the profession this would be, too, a work of supererogation. At the same time it may be advisable, in this connection, to refer briefly to the manner in which, and the degree to which, the general health is influenced by exhalations from decomposing organic matters in sewers, house-drains, vaults, cess-pools, and cellars. It must have been the frequent experience of all physicians that every question as to the tainting of the air of a house from these sources is met by the assertion that no bad smell has ever been perceived. In the first place, the accustomed nostril is dull to detect a constant odor, and in the next it is hard to make people believe that where they can smell no offense there still may be danger. We ourselves know that the juices of the cadaver are most fatally dangerous before offensive

decomposition has set in. Those who have given attention to the influence of drain-air in causing disease know very well that the action of this upon the health bears no relation to the intensity of its accompanying odors.

The only safety is to be sought in the absolute freedom of the air that is breathed and of the water that is drunk from every species of contamination due either directly or indirectly to organic decomposition. A little rift in the waste-pipe of a wash basin, so slight as to be detected only by the application of tissue-paper, has kept a whole family miserable and complaining, and susceptible to every species of contagion, for years together. Decaying vegetables in a cellar, and decaying filth in the waste-pipe of a kitchen sink, may be regarded as the bane of the existence of half the women in America. Those more serious defects which come of ignorantly arranged plumbing work -- by no means of good plumbing work, which is the sanitarian's best aid -- are responsible not only for most of the zymotic diseases appearing in the better class of houses, but in like degree for the generally ailing condition of so many of those who pass most of their days and nights in these houses.

The regulation of all these helps to healthfulness is a matter of detail which may well engage the best attention of the profession. Even the cataloguing and classification of the subject here would be impossible. The fundamental principle should always be borne in mind that neither in a sewer, nor in a cess-pool, nor in a house-drain, nor in a soil-pipe, nor in the smallest waste-pipe should decomposition be allowed to proceed without such an abundant presence of fresh air as will secure its most rapid and complete progress. The same condition of obstructed decomposition which fosters the development of infecting agencies is precisely that which leads to a generally unwholesome and debilitating atmosphere. All investigation of this subject, and all discussion of the *modus operandi* by which unwholesome influences lead to the spread of epidemic diseases and to the lowering of the general health, bring us at the end to a firm belief in the principle covered by Hippocrates's prescription : pure air, pure water, and a pure soil.

RELATIVE FREQUENCY OF COLOR-BLINDNESS IN MALES AND FEMALES.¹

BY B. JOY JEFFRIES, A. M., M. D.

In an article written last fall on the dangers of color-blindness, and just published in the Massachusetts State Board of Health Report, I stated, " It has been frequently said that color-blindness was less com-

¹ Read at the Suffolk District Medical Society, May 25, 1878.

mon among females than males. This is *probably* incorrect, and due to the fact that such a defect is of more importance with the female sex, and therefore more carefully concealed. They have not been tested as males have; and most likely future statistics, based on true methods of testing, will reverse the now quite general impression as to their having better color perception, and hence to be preferred, where admissible, as railroad employés."

My doubt was also based upon the fact that we had no large number of reliable statistics to prove the contrary. But more especially because methods of testing for color-blindness in females had been employed, calling upon the observed to name colors shown, which females from habit could unquestionably do with greater facility than men, and hence fewer appear deficient in color perception. Professor Wilson, in his *Researches on Color-Blindness*, says, page 75, "I have no results to offer respecting the prevalence of color-blindness among females. I have already stated my conviction that it is rarer among them than among males, but only an extended inquiry can show the amount of difference in this respect between the sexes." In a note in his appendix, page 164, he adds, "Since the text was written I have been informed of a few more cases of color-blindness among educated women in England. The general tendency, however, of my later inquiries, as of my earlier ones, is to show that color-blindness is very much rarer among women than men."

Dr. A. Favre, in an article in the *Gazette hebdomadaire*, October 12, 1877, says, "We have tested very few adult females, from the difficulty of such examinations, but more especially because the majority of women readily acquire an exact notion of colors, and they do not belong to the professions where color-blindness is dangerous; hence they do not interest us more in an industrial than a medical point of view. Among 236 girls of four schools (three in Lyons, one in Paris) we found 8 children only who made serious mistakes, namely, 3.39 per cent. In the 'salles d'asiles' and the infant schools the errors were as frequent among the little girls as boys."

It must be remembered that Dr. Favre reported an enormous number of children of both sexes as color-blind, but he tested them by asking the names of the colors of objects held up before them. He found, as may be readily imagined, many of the youngest children of both sexes unable to answer correctly, whilst among the older children the girls had naturally learned the names of colors better than the boys. This I think is all that his test proves, as I have shown in the *JOURNAL*, March 28th.

In 1860 Dr. Henri Dor, of Bern, tested in Berlin 611 women, using a method similar to that of Professor Holmgren's, namely, the sorting of colored worsteds, with the result of finding only five or 0.82 per cent., or one in 122 color-blind. This method does not call upon the examined

to name a color, and the eye alone, not memory, guides the hand. Its value is shown by the results it gave. Perhaps these investigations of Dor's should have prevented my doubting the less frequent occurrence of color-blindness in women than men. They seemed, however, to stand somewhat alone, and not sufficiently extended. Perhaps the same criticism will be passed upon my own, shortly to be reported. Professor Holmgren, in his recent work on color-blindness, touches on this point, and as his experience renders what he says of special value I quote his remarks:¹ "Our results thus far are principally derived from the examination of men. Therefore we do not venture to deny the commonly admitted statement that color-blindness is more frequent with men than women, since we lack the necessary data. We should mention here Professor Dor's test of the quite respectable number of 611 women in Berlin, amongst whom he found but five color-blind, or less than one per cent. We would by no means deny the possibility of a less frequent occurrence in women; on the contrary, we incline to believe that it is probable. In drawing conclusions from the statistics of the examination of women hitherto made, we must first of all ascertain if the method of testing was such that the previous occupation of the examined had not affected the results obtained. For if the method was based on the principle of asking the names of the colors of objects exhibited, and the chromatic sense of the person examined judged by the reply, then it is very evident that the proportion of color-blind will appear less with women than men. We are by no means certain that this is not the explanation of the results so far ascertained. However this may be, and even admitting that color-blindness is less common in women than men, we are by no means justified in attributing this to their greater familiarity or exercise with colors. If exercise can have any such influence, it cannot, as we have seen, cure the individual, but rather affect the offspring, as employment insensibly affects future generations. The laws of heredity are too little known to allow us to indicate or even conjecture how this takes place, but we do know with certainty that good qualities as well as defects are transmitted, and amongst the latter we may include color-blindness. We believe, moreover, that the exercise of a sense may favorably affect heredity, although it is difficult for us to prove this."

Probably at the present moment observers in Europe are testing this question of the relative color-blindness of the two sexes. Their results, if Professor Holmgren's method is employed, will be of great value. The only reports of this character yet come to my hand are those of Dr. E. Hansen, of Copenhagen, who found none color-blind among 50 female railroad employés, and of Dr. A. Daae, of Kragerö, Norway, who also used Holmgren's method with the worsteds in examining 418

¹ De la Cécité des Couleurs, etc., page 57. Stockholm. 1877. F. Holmgren.

school-children of both sexes, from nine to fifteen years of age.¹ Among 205 boys he found 10 color-blind and 11 with imperfect color perception. Amongst 208 girls he found none color-blind, and only five with imperfect color perception (*herabgesetzter Farbensinn*). He says: "The better color perception of the girls than the boys was very marked. Is this because the girls have personally more exercise with colors than the boys? If this is the case, then we must assume that even very considerable degrees of color-blindness may be relieved by many years' exercise. This is, however, not probable. It is more probable that the better color perception which the female sex has acquired and developed by many generations of handling colored objects is essentially sexual, or only inherited by the female descendants."

Since February 23, 1878, when I read an article before the society on the incurability of congenital color-blindness, my experience with intelligent and educated persons thus afflicted has fully substantiated what I then said, namely, that it has not been and cannot be cured by exercise with colors. The color-blind reported to me their futile attempts to do this, as others, for instance, reported to Professor Wilson years ago, and to Professor Holmgren more recently. Greater familiarity with and more constant use of colors on the part of females seems at first sight to explain their somewhat extraordinary exemption from color-blindness as compared with males. This does not, however, affect the individual. Whether the individual is influenced through generations of female ancestors exercised with colors I must for the present leave with Mr. Darwin to discuss.²

In any such discussion there are some points of heredity which must not be overlooked. The very first case of color-blindness ever published was that of a shoemaker named Harris, in a letter of Mr. Joseph Huddart to the Rev. Joseph Priestley, January 15, 1777, to be found in the Philosophical Transactions of the Royal Society of London, Part I., 1777: "He had two brothers in the same circumstances as to sight; and two other brothers and sisters who, as well as their parents, had nothing of this defect." The transmission of the defect in the male line alone is very frequent. But there are cases of the reverse on record. Dr. Pliny Earle reported out of 61 relatives — 32 males and 29 females — 20 cases of color-blindness, two of these being females. Again, Cuvier, in the first volume of the *Annales d'Oculistique*, 1838, reports the case of a lady who was color-blind. Her mother and two sisters were the same. Her brother was free from the defect. The lady

¹ Vide Magazin for Lægeridenskaben, Bd. 7, Heft vii., 1877; or Centralblatt für Aug., April, 1878.

² Professor Delbœuf, of Liège, reports in the March 23d number of the *Revue scientifique* that by looking through a solution of fuchsine he was enabled to correct in a great measure his red-blindness. M. Spring, who worked with him later, found that he could render himself color-blind by looking through a solution of *chlorure de nickel*.

had six children, — one son not color-blind, and five daughters affected like herself. The oldest daughter had four children; two of them girls, color-blind. The second daughter had a boy and a girl, the latter color-blind. The fourth daughter unmarried. The fifth left a boy myopic, but not color-blind. We thus have the remarkable instance of color-blindness appearing only in the females of a family for four generations. Heredity has here apparently acted without reference to or directly against the accumulated effects of generations of exercise with colors. My own experience agrees with Professor Wilson's in England, namely, that hardly a person affected with color-blindness will be found who cannot remember or mention one or more relatives with similar defect of vision. It has seemed to me to act as any other family peculiarity or mark; for instance, skipping one to appear again in the succeeding generation, etc. It is certainly a very curious fact that if generations of exercise with colors is gradually eliminating color-blindness from females, this should not have checked its transmission through females exclusively for four generations.

My own results as to the relative frequency of color-blindness in males and females are as follows. In the Institute of Technology in Boston, the various departments of Harvard University, Amherst College, and Brown University, I have tested 1021 students and instructors, finding 46 color-blind, or about one in 22. This corresponds with the average experience of European observers. I used Holmgren's method, with colored worsteds. It did not seem necessary to test *all* students of these institutions, even if it were possible, since my ratio is wholly borne out by examiners on the other side of the water. As to females, I considered it necessary to test each and all of any one institution. I therefore commenced at Wellesley College, and was surprised to find but one color-blind girl among 302. Her mother, she told me, was also color-blind. Five or more of the students voluntarily mentioned having color-blind blood relatives. This result appeared so extraordinary that I should have been inclined to doubt the test, or my own ability to apply it properly, had I not already familiarized myself with it in several hundred of previous examinations of men. I therefore felt it necessary to push on in this direction with institutions where I could be assured of being able to test each and all, and am now at work in the public schools of Boston by permission of the school board. I would so far report as follows: In the Girls' Normal School, Boston, 84, being all, and none color-blind. Their ages, eighteen to twenty-two. In the Girls' High School 549, being all, none color-blind. Ages fourteen to twenty. Exeter Street School, all the girls, numbering 90, none color-blind. Ages eight to sixteen. Thus I found but one color-blind among 1025 females, whilst among 1021 men I found one in 22 deficient in the chromatic sense. The relative proportion of the three forms of color-blindness — red,

green, and violet — I will not enter into here, but merely remark that I found, as other observers have, the first much the more frequent, whilst of the last only three cases occurred, and these by no means so marked as the other forms. As to the value of these results, I admit that they of course depend on the exactitude of my observations. I therefore would say that from familiarity with the test I feel perfectly sure that I detected color-blindness where it existed. I always pushed the test much further than would seem necessary, often thereby causing remark and question from the bystanders. Although seemingly tedious and monotonous from the tax upon the eye and ear and voice of the examiner, I found my tests of great psychological interest, frequently shared in by educated observers.

Since this paper was read at the society I have received the reports of Drs. Hermann Cohn and Hugo Magnus in Breslau, who the past winter have been like myself engaged in the examination of school-children for color-blindness. They employed the same method as myself, namely, Professor Holmgren's, and their results agree with mine above given. Among 2761 boys they found 76, or 2.7 per cent., color-blind. Among 2318 girls they found only one color-blind, or 0.04. This defect seems, therefore, a very great rarity among females. Color-blindness occurred twice as often among Jewish children as among Christians. The single case among girls which Dr. Cohn found was one of red-green and blue-yellow blindness, quite atypical.

TWO CASES OF EMPYEMA; RAPID RECOVERY AFTER OPERATION.

BY W. H. WORKMAN, M. D., WORCESTER.

CASE I. A. B., a boy of five years, came under the notice of Dr. Henry Clarke upon the 14th of April, 1875, having been ill about three weeks. He was much emaciated, very feeble, and was bathed in perspiration. His temperature was considerably elevated. He had been allowed but little nourishment, and was said to have been treated for "disease of the liver." Examination revealed extensive effusion in left side of chest. The next day, April 15th, the aspirator was used, and three pints of pus were withdrawn. After the operation the child improved, and took nourishment and stimulants freely. April 25th, the chest having refilled, Dr. Clarke made a permanent opening in the eighth intercostal space below the angle of the scapula. A considerable quantity of very offensive pus was evacuated. The cavity was thoroughly washed out with a weak solution of carbolic acid. Stimulants, liquid nourishment, and tinct. ferri chloridi were prescribed, and the pleural cavity was to be washed out daily with a solution of carbolic

acid. This treatment was carried out chiefly under the supervision of the writer, and the further progress of the case was as follows:—

On the day after the operation all fætor had vanished. There was but little discharge, and that sero-purulent. The child was comfortable and much brighter. From this time the discharge diminished daily in quantity, was chiefly serous, and was destitute of odor. The strength improved, and cough was not urgent. The lung, which had been much compressed, expanded and resumed its natural position. About five weeks after the permanent opening was made, respiration could be heard quite to the base of the chest, of good quality, and unattended by râles or friction sounds. The diseased side was somewhat flattened. The opening was now allowed to close, and all symptoms being favorable the patient was discharged. A few months ago he was seen and examined by the writer, who could discover no deformity, nor other trace of disease. The left side was in every respect the equal of the right side of the chest.

CASE II. On the evening of August 10, 1877, the writer was called to a child three years of age, who had been ill for a month with cough accompanied with fever and thirst. When seen the patient was lying with half-closed eyes, apparently unmindful of what was taking place around him. He was pale, emaciated to a skeleton, and coughed frequently. Respiration was moaning, and about fifty per minute. Temperature in axilla 99.2° F.; pulse 160. The left side of the chest bulged considerably, the intercostal furrows being obliterated, while upon the right side they were strongly marked. Percussion of the left side revealed greatly diminished resonance above the second rib in front and in the supra-scapular fossa; thence absolute flatness to the base both in front and behind. Upon auscultation distant respiration without râles or friction sounds could be heard over the whole of the left side, evidently transmitted from the right side, since the quality of the respiration on the two sides was the same. The respiratory murmur of the right side was harsh, but attended with no râles. The heart was pulsating almost entirely to the right of the sternum, the apex impulse and systolic sound being situated about an inch to the right of this bone in the fifth intercostal space.

Stimulants were freely given during the night, and the next morning, with the assistance of Dr. J. B. Rich, I withdrew with the aspirator forty-six ounces of odorless, chocolate-colored pus, the puncture being made in the eighth intercostal space, a little outward from the angle of the scapula. Reversing the action of the instrument, the pleural cavity was thoroughly washed out with a one per cent. solution of carbolic acid. No severe coughing followed the operation. Immediately afterwards the child fell asleep, and the pulse, which previous to evacuation of the fluid was 166, fell to 148.

The next morning the patient was much brighter, noticed all that was being done in the room, and called for and was allowed to eat a small "fried pout." Temperature under the tongue 99°; pulse 144.

The after-treatment was conducted as follows: (1.) The patient was well protected with flannel. (2.) Concentrated liquid nourishment was given hourly in such quantities as could be well borne. (3.) Opium was taken sufficiently often to allay undue irritability. (4.) Tinct. ferri chloridi was administered in whisky every six hours, and lager beer was allowed *ad libitum*.

During the eight days following the operation the pulse ranged from 136 to 140, and the temperature from 98° to 99°. Upon the ninth and tenth days, after exposure to cold at night, the temperature rose to 100.6° and 101.4° respectively. It then fell to the normal point, above which it did not again rise. Appetite and strength steadily improved. Cough was at no time marked.

September 8th, twenty-eight days after aspiration of chest, the condition of the patient was the following: color good; respiration easy and regular; bowels open; appetite good; no cough; tongue clean; pulse 100; temperature 98.4°.

The left side was somewhat flattened and not so free in its movements as the right. The percussion sound was a little tympanitic. The respiration and vocal resonance were fainter than on the right side, but of good quality, and heard to the base of the chest. There were no râles or friction sounds. The heart beat in the normal position.

At date of writing, February 16, 1878, the child is in the enjoyment of perfect health, and exhibits no sign of his former disease.

These cases illustrate the success which may attend the surgical treatment of empyema, even when the circumstances before operation are such as to render the prognosis unfavorable or very doubtful. Both of these patients were in an extremely wretched condition, so that no opinion as to prognosis could be ventured at the time of the aspiration of the chest. In Case II. the operation was urged as giving only a chance of saving the life of the child, who was apparently moribund.

Noteworthy are the complete change within twenty-four hours in the character of the discharge and its subsequent scantiness in Case I.; the fact that the employment of aspiration alone, and that only once, was necessary in Case II.; and the rapid and complete recovery made in both.

RECENT PROGRESS IN THE TREATMENT OF CHILDREN'S DISEASES.

BY D. H. HAYDEN, M. D.

Treatment of Intertrigo in Infants. — (Adolf Wertheimer, Munich.¹) Intertrigo, which at the start and in its lower grades is a slight and insignificant disturbance, can in its further development and extension become a disease endangering the life of the child. As an evidence of the want of appreciation of its importance, and of correspondingly meagre directions to be found for its treatment, one need only consult the latest literature on the subject.

Intertrigo begins always as an erythema, a simple hyperæmia of the skin, caused by some chemical or mechanical irritant, such as an abnormal character of the fæces, decomposed urine, etc. (intertrigo of the nates and genitals), or by the continual contact and rubbing of two cutaneous surfaces opposed to each other (neck, behind the ears, axillæ, folds of the thigh, etc.). In these last cases, also, the chemical element plays a more important part than the mechanical, since here it is not so much a question of rubbing as of the irritating effect of decomposed secretions, principally of a fatty character, the sebaceous glands being much more active in infant life than the sweat glands.

When the action of the above-mentioned irritants continues for a certain length of time, the simple erythema, which itself is accompanied neither by exudation nor exfoliation of the epidermis, under a gradual softening of the latter goes into the diffuse erythematous dermatitis, the affected portion of the skin becoming highly red, excoriated, and moistened with the exuding serum. It is only where the infant is in a cachectic state, or is placed under the most unfavorable external conditions, that it comes to the formation of a diphtheritic membrane on the excoriated places, or to the transformation into gangrenous ulcers. One such instance only had the author seen, — an infant, prematurely born, four and one half months old, with a hernia inguinalis of the right side, at which spot an intertrigo had been started from wearing a truss. One spot in the lumbar region, owing to continued pressure, developed into a gangrene. The slough, on coming away later, left behind a deep ulcer, which subsequently healed under proper local treatment, the infant being nourished by the breast of its healthy mother.

Of great importance, in a practical point of view, is the disposition of the disease in question to extend over large surfaces, and herein lies its significance and danger. It is not unfrequent to meet with cases where, starting in the folds of the neck, it is found to have extended upwards to the angle of the jaws and downwards as far as the middle of the sternum. When the intertrigo starts from the neighborhood of

¹ Deutsches Archiv für klinische Medicin, Band ii., Heft 2 and 3, 1878.

the anus it is prone to take on a wandering character, and can thus give rise to various local as well as general disturbances of a serious nature.

The widely accepted theory that the severe grades of intertrigo are confined almost exclusively to the poorer classes, and are due to the want of proper care, does not coincide with the author's experience, for he has often seen the disease in its worst forms in families where all the surroundings were favorable to health, and where the greatest care had been taken of the children with regard to cleanliness, though not always understandingly and in the right way. The skin of some children possesses an abnormal vulnerability, so that the slightest irritation can produce an erythema, which, once existing, rapidly extends. In a few cases the author has seen an intertrigo on the lower portion of the body followed by an erythema papulatum over the whole trunk, which after a few days would disappear. It is not rare to see ecthyma pustules spring up in the neighborhood of an erythematous eruption, terminating in superficial ulcers. In one case, an infant five months old, with acquired syphilis, an intertrigo on the inner surfaces of both thighs was the principal and nearly the exclusive seat of plaques muqueuses.

The treatment has for its duty to remove the exciting cause, and to heal as quickly as possible the cutaneous eruption.

With regard to the first indication, when the intertrigo is situated in the neighborhood of the anus, attention must be directed primarily to the character of the stools, which must be restored to their normal condition when found deranged and irritating.

When the child is brought up in part or exclusively with artificial food, the procuring of good fresh cow's milk, with attention to its proper dilution and to the "emulsionizing" of the caseine, is often sufficient of itself to improve the faulty digestion and assimilation; and for this purpose the author has found best adapted to infants in the first two months of life one part milk and three parts barley water. Between two and five months of age the proportion is increased to one part milk to two of barley water, and later to equal parts of the two. When the stools are thin and of acid smell he employs daily two or three times the following powder:—

<i>Rx</i> Calcis precipitat.	gr. iss.
Bismuth. subnitrat.	gr. i.
Sacchari albi	gr. iij. M.

In other cases, where the discharges have a less serous character, and are characterized rather by abundant yellowish-white flakes of caseine, minute doses of muriatic acid produce better results. The fact, however, still remains that many cases will be found rebellious to every treatment, and recovery will be effected only by the employment of a wet-nurse. Great care must be taken to remove wet diapers, and to insure the under-clothing's being always dry. It is better in

washing the folds of the skin — the favorite seat of intertrigo — to use lukewarm soap and water, as this removes more easily than cold water the accumulated fatty secretions.

Powders should be used locally only when the epidermis is sound; otherwise they are injurious by adhering to the secretions and forming crusts, which act as foreign bodies and increase irritation. The sporules of the lycopodium, owing to their oily nature, are preferable to the different amylaceous powders. Still better is an admixture of semen lycopodii with finely powdered subnitrate of bismuth or oxide of zinc.

Whenever the intertrigo is so advanced as to present moist excoriations, a different treatment should be immediately adopted. The author strongly disapproves of the use of the so-called "drying salves" prepared with animal fats, such as the zinc and lead ointments, and attributes the severity of many cases that have come under his care to the injurious effects of their long and lavish use. A decided preference is expressed for the unguentum diachyli of Hebra, and its employment in fresh cases is generally satisfactory. In other cases it fails, and the author has of late employed, in severe forms of the disease, a remedy that has completely fulfilled every expectation, namely, corrosive sublimate.

His method of using this latter remedy is very simple. The solution employed is: —

R̄ Hydrarg. chlor. corrosiv.	0.05
Aque destillate	100 M.
(About one grain to four ounces of water.)	

Pieces of lint are soaked in this solution and laid upon the diseased surface. It often suffices to apply the solution in this manner three or four times a day for an hour at a time, and it is rare that the application must be continuous. According to the author the action of this remedy is "an astoundingly favorable and rapid one." Within a few days, not rarely in from twenty-four to thirty-six hours, the dark redness and exudation disappear, and the affected skin becomes painless and dry, regeneration of the epidermis taking place in a very short time. The author has never observed any injurious effects from the absorption of the mercury, although he has often applied the solution over large surfaces. If the possibility of such absorption is borne in mind, the danger in these cases will always be small, owing to the short time that treatment is ever required, the rapidly re-forming epidermis impeding the absorption. When recovery is well under way the author is accustomed for a short time to employ the unguentum diachyli to prevent relapses. All doubts as to the existence of congenital syphilis must be excluded.

When the intertrigo becomes diphtheritic or gangrenous an antiseptic treatment must naturally be resorted to.

Scarlatina.¹ — At the meeting of the Berlin Medical Society held November 7, 1877, Herr Henoch enumerated the following as deviations from the normal fever type of scarlatina that are frequently met with: —

(1.) The evening fever sometimes continues for eight days after the eruption of the skin has faded away, without the existence of any ascertainable local causes, the fever curve acting similarly to that in the stadium intermittens of typhoid fever.

(2.) After a rapid increase of temperature at the beginning there sometimes ensues a condition of complete apyrexia, similar to what usually takes place in measles, while all the other symptoms continue to develop in the usual manner.

(3.) In one case Herr Henoch observed the *typus inversus*.

(4.) The fever is sometimes from the start remarkably light, in which case the other symptoms as a rule are of moderate severity. When the fever lasts abnormally long, complications are to be suspected. Of these the most prominent ones are inflammations of the ear or in its neighborhood (periostitis), and phlegmonous inflammations below the jaws. In the latter cases an interval of apyrexia usually precedes their onset.

Herr Henoch had lately had under his observation two cases of so-called relapsing scarlatina. In answer to a question by Herr Baginski if some of these described cases of relapses might not be in reality other exanthemata, which made their appearance in patients convalescing from scarlatina, and which were confounded with the latter, Herr Henoch replied that in some cases it did seem that the appearance of a new exanthema — as measles, *rötheln*, erythema — had been mistaken for scarlatina, and that in hospitals where the opportunities for contagion were abundant such mistakes could easily happen.

Herr Senator reported a case where there could seem to be no doubt of its being a true scarlatinal relapse. In the previous winter a child had been presented at the *poliklinik* of the Augusta Hospital having the characteristic desquamation and a slight oedema of the skin. According to the mother, fourteen days previously the child had had an eruption, accompanied by high fever, which had been pronounced by the attending physician to be scarlatina. At the time when seen by Herr Senator there was high fever. On the following day there appeared a well-marked eruption of scarlatinal erythema with pharyngitis. As the mother was ordered to keep the child at home a further observation was not possible.

In answer to Herr Lewin, Herr Henoch remarked that the appearance of articular rheumatism during scarlatina was not rare, and had been long known. In the majority of cases it is a synovitis; and at the

¹ Berliner klinische Wochenschrift, No. 2, January 14, 1878.

same time there are often inflammations of other serous membranes, as of the pleura and endocardium. The heart affection is often overlooked, and not discovered until later. Chorea, as is well known, sometimes befalls the patient, exactly as in acute rheumatism.

Herr Perl asked if in the cases of relapse observed by Herr Henoch there was an enlargement of the spleen, which, according to Tojanowski, is found in such cases.

Herr Henoch replied that the spleen could not be felt in either case, and took the ground that such enlargement was to be diagnosticated with certainty only when the spleen was perceptible by palpation, and that percussion gave no indications that were to be relied on as accurate. He regarded, consequently, the statements as to a constant enlargement of the spleen in infectious diseases to be problematical. In answer to Herr Citron, if in his cases of relapse any medicine had been given, such as morphine or quinine, which could bring out an erythematous eruption resembling that of scarlatina, Herr Henoch answered in the negative.

The Systolic Cerebral Murmur of Children. — Dr. A. Turasz,¹ from numerous observations of his own upon children, both healthy and sick, as well as from anatomical measurements of the carotid canal, arrives at the following conclusions: —

(1.) This murmur is invariably intermittent, synchronous with the pulsations of the cerebral arteries, and is most frequently heard over the large fontanelle, or over the whole cranium, sometimes only in the temporal region (here generally of a somewhat higher pitch). It occurs only in children between three months and six years of age. Its existence is intimately connected with the development of the base of the skull, especially with that of the carotid canal, and probably, too, with that of the foramen spinosum.

(2.) The cause of the murmur is to be ascribed to the disproportion in size which at times exists between the internal carotid artery in its growth and the unyielding bony canal, the latter becoming partly obstructed until by the pressure of the blood a dilatation is effected. Up to about the sixth month there is no change in the size of this canal. It then begins to enlarge rapidly, so that by the third to the sixth year of life it has nearly reached the size which is found in the adult. The growth of the canal stands in exact relationship to the known changes that take place in the circumference of the skull in growing children. Similar changes take place in the enlargement of the foramen spinosum.

(3.) The cause of the cerebral murmur is consequently a physiological one, and stands in no immediate relationship to any pathological changes. In sixty-eight carefully observed cases it was found twenty-

¹ Heidelberg. C. Winter. 1877. 8vo, 96 pages. Centralblatt für die medicinischen Wissenschaften, No. 50, December 15, 1877.

one times, without any difference caused by health or disease, existing in both sexes, and of varying degrees of strength. Variations in loudness are noticed in the same child at different times, and are very likely due to the changes in the force of the heart's beats.

(4.) This murmur is therefore of no value as a means of diagnosis.

(To be concluded.)

PROCEEDINGS OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

A. L. MASON, M. D., SECRETARY.

FEBRUARY 23, 1878. Seventy-three members were present, DR. HOMANS the president, in the chair.

Ovarian Tumor treated by Electrolysis. — DR. W. G. WHEELER reported a case of ovarian tumor treated by electrolysis, which will be published at length.

DR. WING thought that most of the successful cases of electrolysis of ovarian tumors were not well authenticated. This mode of treatment is not allowed as the cause of death, which in one instance was said to have been due to peritonitis, after electrolysis of a uterine fibroid.

DR. WHEELER said that Dr. Semeleder had reported eight successful cases, that there had been three at Montreal, and a few others, but not enough as yet to admit of reliable conclusions. Still Dr. Wheeler thought that there was danger from the needles; not so great, however, as that which follows the escape of fluid into the peritonæum after tapping, an accident which was not likely to happen with the use of Kidder's insulated needles. He had applied these needles for five minutes in a case of hydrocele in an old gentleman who had previously been tapped five or six times annually. The action was similar to that of the injection of an astringent fluid. The sac did not refill.

DR. MARCY reported a case of ovarian tumor treated by electrolysis, after the method advocated by Dr. Semeleder: —

Mrs. H., aged twenty-four, had had a slowly growing tumor of the left ovary under observation for a year prior to treatment. The tumor was thin-walled, reached to the umbilicus, extended to the right of the median line, and measured eight by eight and one half inches. The measurement at the umbilicus was twenty-eight and one half inches, and two inches below the umbilicus it measured thirty-one and one half inches. There was a distinct wave of fluctuation upon palpation, and the diagnosis was a unilocular ovarian cyst. Treatment commenced in January, 1877, and consisted of the use of a sixteen-cell battery of the Galvano-Faradic Co. This was kept in good order, would readily decompose water, and the brass button applied to the moist skin would immediately produce vesication. Only one needle was used, the other pole being applied externally over parts of the tumor. Each application was limited to ten minutes, and repeated twice a week. The size of the tumor diminished rapidly, the cyst became firmer, and fluctuation ceased after six or eight applications. At the end of six weeks the tumor was not larger than the doubled fist, was firm, and the needle entered with difficulty. Further use of

electrolysis was suspended, because the small size of the remaining mass rendered the use of the needle dangerous.

Two months later the tumor was two thirds its original size, and increased by a soft, fluctuating cyst, enlarging from behind the one treated, which was clearly felt as a hard, firm, movable mass, just above the rami of the pubes.

Electrolysis was again used for about two months with a very similar result, when treatment was suspended for a similar reason. Two months later Dr. Marcy found the patient under the care of an irregular practitioner, who gave no hope of cure until by external applications the hardened mass could be softened. This Dr. Marcy understood had very effectually taken place, and that the patient was awaiting excision, to be performed by a member of this society.

DR. WHEELER inquired whether the patient experienced much pain after the use of the needles.

DR. MARCY said that there was very little if any; once or twice a slight inflammation of the abdominal surface at the seat of puncture.

DR. WHEELER had noticed in one instance, after puncture, considerable irritability of the bladder, which sometimes required an opiate. In five cases of uterine fibroids electrolysis caused so much pain that ether was required. The passage of a large quantity of limpid urine was thought to be due to the action on the nervous system.

Development of the Eye. — DR. D. HUNT read a paper on the Development of the Eye, as a preface to a new hypothesis as to the causation of myopia, to be presented at the next meeting.

Color-Blindness. — DR. JEFFRIES read a paper on Color-Blindness and its Incurability, which was published in the JOURNAL of March 28th.

Atomizing Apparatus. — DR. DE BEER showed an apparatus for administering steam baths, applying antiseptics, etc.

Injury of the Abdomen. — DR. WEEKS presented to the museum a pitchfork handle which had inflicted a curious injury. Dr. William H. Bragdon, of North Conway, had sent the following description of the case: The patient, while sliding from the top of a load of hay, impaled himself upon the sharp-pointed handle of the pitchfork, which was sticking upright into the floor below. It entered the scrotum, and passing in front of the pubic bone went upward in the abdominal wall to the umbilicus. The handle was said to have been withdrawn "from the bowels," and the patient drove home, a distance of two miles. The medical attendant on arriving could find a slight wound only at the lower part of the scrotum, which had contracted so much that a probe would not pass, and it was not thought possible that the handle had penetrated the abdominal wall, as was stated. But in a few days, although the external wound was almost closed, a swollen, fluctuating ridge appeared, extending from the pubes to the umbilicus, and after several attempts a probe was passed through the scrotum into the tract, in front of the pubic bone, between the abdominal muscles as high as the umbilicus and about two inches to the right. A large quantity of foetid pus escaped, and the patient made a good recovery in four weeks. The points of interest were the obscurity of the diagnosis and the fact that the handle did not enter the abdominal cavity.

Anal Speculum. — DR. ORDWAY showed an improved anal speculum.

MONTREAL GENERAL HOSPITAL.¹

THIS little volume contains the records of a considerable number of autopsies, most of which were made at the Montreal General Hospital, together with such remarks as the editor has seen fit to include.

Dr. Osler's skill and learning as a pathologist are already well known from the various papers which have appeared from time to time under his name. His special training has evidently been largely obtained in Germany, and the thoroughness, objectivity, and system which characterize his records are sufficient evidence that the training has found an apt pupil.

The cases are grouped together under the various systems, osseous, circulatory, respiratory, etc., the anatomical diagnosis being concisely expressed at the beginning of each report. A few of the more interesting ones will be merely alluded to, as a suggestion of what may be found in the volume.

Of late years a very considerable degree of interest has been aroused by the reports of cases of over-strain of the heart. The serious nature of the cardiac lesions which may occur under such circumstances is suggested by the hypertrophy and dilatation of the heart in Case XLIV., without any valvular or other mechanical lesion which could be considered as explanatory. Advanced fatty degeneration apparently ensued, and seemed the most probable immediate cause of the fatal result. Further particulars concerning this case are promised at some subsequent period.

A somewhat famous case of aneurism of the hepatic artery with multiple abscesses of the liver attracts the eye, and a drawing of the aneurism forms the frontispiece to the book. A full account of the clinical features of the case has been published by Dr. Ross, under whose care the patient was.

Dr. Osler enters into an extended explanation of the origin of the abscesses, and their relation to the aneurism, regarding them as essentially due to anæmic necrosis, either through embolic or more gradual obliteration of branches of the hepatic artery.

Case LXI. is reported as one of ossification of the mucous membrane of the trachea. The description suggests that this may have been an instance of perichondritis of the tracheal rings with subsequent calcification, a condition sometimes met with. The lack of any statement of a histological examination permits the reader to doubt whether the diagnosis is sufficiently accurate to enable the record to be made of any further use.

An enlarged liver, weighing nearly seven pounds, is spoken of as a specimen of hypertrophic cirrhosis, and is regarded as quite distinct from the hitherto described cases of enlargement of the liver in the early stages of chronic interstitial hepatitis. Whether any essential distinction between the enlarged and atrophic forms of cirrhosis can be deduced from the histological appearances may be considered as still an open question. The absence of ascites, with the abundant growth of fibrous tissue, is of interest in connection with the possibility of the early recognition of the lesion. Death resulted from erysipelas.

¹ *Pathological Report for the Year ending May 1, 1877.* By WILLIAM OSLER, M. D. Vol. I. Pp. 97.

A very remarkable series of lesions is recorded as the apparent sequelæ of typhoid fever: extensive abscesses in the mesentery, suppuration of the portal vein, empyema, miliary tuberculosis of the lungs, amyloid degeneration of the spleen, liver, and intestine, together with perforation of the vermiform appendage and peritonitis, — a veritable mine of pathological ore. Dr. Osler justly calls attention to the difficulty of grasping the first link of the chain, — a difficulty enhanced by the absence of any sufficient clinical history. At the same time he very judiciously sums up the probabilities.

Two cases of pernicious anæmia close this instructive volume. These also are somewhat familiar to journal readers, as they have appeared from time to time in full or as abstracts since their first appearance.

It may be remembered that Dr. Osler, in connection with Dr. Gardner, made some very interesting researches into the condition of the bone-marrow in one of these cases, and published them in Germany soon after Cohnheim had presented his observations. The latter were thus early confirmed, if not almost simultaneously made. The interesting statement is also presented that Charcot's crystals always occur in the marrow from twelve to thirty-six hours after death. If this generalization proves true it indicates how little diagnostic importance is to be attributed to the formation of these octahedra in connection with any special disease.

"The first pathological report from a Canadian hospital" deserves to have many successors and rivals. If not the first in point of time from an American hospital, all must agree in giving it priority on account of excellence.

R. H. F.

DELAFIELD'S PATHOLOGY.¹

THE two numbers before us comprise the beginning and the end of the inflammations of the pleura. The author gives the following forms: (1.) Pleurisy with the production of fibrine alone. Dry pleurisy. Acute pleurisy. (2.) Pleurisy with the production of fibrine and serum. Subacute pleurisy. (3.) Pleurisy with pus. Empyema. (4.) Dropsical effusion. Hydrothorax. (5.) Chronic pleurisy with permanent adhesions. (6.) Pleurisy of pulmonary phthisis. (7.) Tubercular pleurisy.

As autopsies give but very insufficient opportunities for the study of the early stages of inflammation, Dr. Delafield has had recourse to the lower animals, and has injected the pleural cavity of dogs with chloride of zinc. We are ready to admit that by this method the progress of pleurisy depending on mechanical injury, as fracture of ribs, can be imitated, but we are not aware whether the early steps of an inflammation due to exposure to cold can be reproduced in this way. The successive processes are well described, and the plates give good representations of the new endothelial and connective-tissue cells that appear.

Dropsical effusions into the pleura are not originally due to inflammations of it, but the author shows that changes occur in the cells of the pleura, which

¹ *Studies in Pathological Anatomy.* By FRANCIS DELAFIELD, M. D. New York: Wm. Wood & Co. Nos. 3 and 5. 1878.

no doubt are of an inflammatory nature. The changes in the old cells and the appearance of the new ones are well shown in Plate XVI.

There is one form of pleurisy which Dr. Delafield finds only in chronic phthisis. In his own words, "The peculiarity of this inflammation is this: that the production of fibrine and of new tissue seems to go on simultaneously. There is not, as in ordinary pleurisy, first a production of fibrine and then a formation of new tissue and a disappearance of fibrine. But these two processes are repeated over and over again, so that the layer on the surface of the pleura gives us an inextricable confusion of fibrine, of blood-vessels, and of new connective tissue in different stages of growth." He pertinently asks whether many of the subcrepitant râles heard in this disease may not be produced by the rubbing of the two thickened and roughened surfaces against one another, as they are adherent only in places.

THE SCIENCE OF FRENCH CONJUGATION.¹

THIS is the title of a pamphlet of forty pages, by Dr. Edward F. Williams, devoted to the study of French verbs based on their analogy to the Latin. This little book is a new and valuable contribution to philology, of undoubted value to the advanced student in French, and ought to be of especial assistance to the medical man who, familiar with Latin, desires to read easily the language in which so many valuable contributions to medical science are published. The only drawback that we can see to its utility lies in the fact that most pupils learn their Latin, and also their French, not in the scientific way in which it ought to be studied, but acquire an ability to translate merely without paying much attention to philology; the real analysis of the language and the rules of formation from stems being acquired by comparatively few, the more earnest and thorough students. But in view of what ought to be rather than what is, this book is to be highly commended.

HUTCHINSON'S PLATES.²

THE tenth fasciculus contains interesting illustrations of and remarks on pyæmia. Mr. Hutchinson has several suggestions to offer in regard to the character and some of the different phases of the disease, which add greatly to the value of what he has to say upon the subject. His views of the relation of so-called "external pyæmia" or multiple abscesses of the cellular tissue and multiple acute periostitis to pyæmia are interesting and suggestive. There are also some examples of gun-shot fractures. This fasciculus closes the first volume, and we are glad to learn that such has been the success of the work thus far that the author is encouraged to complete another volume of similar size.

¹ *The Science of French Conjugation.* By DR. EDWARD F. WILLIAMS. Published and for sale by Lockwood, Brooks & Co., Boston.

² *Illustrations of Clinical Surgery.* Fasciculus X. By JONATHAN HUTCHINSON, F. R. C. S. Philadelphia: Lindsay and Blakiston. 1878.

THE INTERNATIONAL CONGRESS OF HYGIENE.

As did Philadelphia two years ago, so is Paris this summer availing herself of the concourse of distinguished men already within her borders, and of the attractions which she offers to people in all parts of the world, to hold congresses for the discussion of subjects which have an importance and interest for civilized man wherever he may be found. These meetings for the comparison of views formed amid varying surroundings, and the formation of acquaintances between men interested in similar subjects in different quarters of the globe, have become a very valuable adjunct of great exhibitions.

From among such meetings the International Congress of Hygiene, which is to commence its sittings the first of August, will have a great value for the community at large and for members of the medical profession, and a peculiar claim upon their consideration. The congress has hardly excited the attention in this country which it deserves; we could have wished that greater pains had been taken to give it publicity, and that invitations to attend it had been more freely extended. Much has been done to secure the attendance of those most prominent in matters pertaining to hygiene throughout Europe and Great Britain. We are happy to say that Massachusetts will be represented by the able secretary of her State Board of Health, and some other States have sent representatives.

The plan has been adopted at this congress not only of announcing beforehand certain subjects for discussion, but also of publishing and distributing a month before the meeting the opening papers prepared at the request of the organizing committee upon the subjects appointed by it. Those attending the congress will thus have the advantage of knowing not only the subject for discussion on any given day, but also the line upon which the debate will probably become engaged, and both the want of preparation upon certain points and the forcing doors already open, as our French friends express it, may be avoided.

The six subjects, or groups of subjects, proposed for discussion by the organizing committee are the following: (1.) Infant mortality. (2.) Pollution of water-courses, utilization of sewage, etc. (3.) Food and its adulteration. (4.) The dwellings of the poor. (5.) Injurious trades and industries. (6.) Infectious diseases. These will be submitted at the afternoon meetings. The morning hours are to be devoted to such questions as the members present may wish to bring up. The six groups of subjects proposed by the committee cover a very large field, and in regard to most all of them much is to be learned from the French, both as to what to do and what to avoid. In regard to the first three groups they have especially much to teach from which we may profit.

Men of various professions will be in attendance, — architects and engineers, as well as physicians and hygienists, so called. Some definite addition to our knowledge can hardly fail to come from such an assemblage. An international code of hygiene is certainly no less important than an international code of law: may this congress bring us a step nearer to it.

MEDICAL NOTES.

— The Boston Medical Library has recently received the library of the late Dr. Edward Warren, of Boston, consisting of two hundred bound volumes and six hundred valuable pamphlets.

— A paper in *New Remedies* On our Present Knowledge of the Cinchona Alkaloids describes no less than twenty-six which have been already discovered.

— The *Medical Examiner* publishes the following note relative to "Local Morbid Temperature: " —

By this expression Professor Peter desires to indicate the connection which exists between some internal diseases and the changes of temperature in parts superjacent to the diseased structures. He employs the common medical thermometer, because he desires to bring the control of his experiments more readily under all classes of practitioners. This new application of physical phenomena to the diagnosis of internal disease is illustrated by the use of the thermometer in cases of pleurisy, incipient phthisis, and some obscure abdominal affections. Thus, M. Peter's carefully recorded experiments show that in pleurisy limited to one side the temperature of the skin over the diseased side of the chest is invariably higher than the general temperature of the body. The local hyperthermia always amounts to half a degree (centigr.), and may in some cases reach five degrees. The skin is also warmer over the unaffected side of the cavity; but the difference of temperature is always well marked. When effusion takes place into the cavity of the pleura the parietal heat increases proportionately until the effusion has reached its maximum. It is not to be inferred from this that no augmentation of temperature takes place on the side free from effusion, but simply that a constant difference exists between the two sides of the chest. In proportion as the effused fluid is absorbed, so does the heat of the skin on the same side diminish. It is, however, important to remark that increased heat on the affected side persists for some time, thus indicating the possible occurrence of relapse. The secretory arteries in the interior of the cavity have not returned to their normal state, and thus an anatomical condition favorable to effusion persists.

— *L'Union médicale* gives an interesting description of a Chinese wine, which is manufactured by adding to water a certain quantity of a powder, or a sort of cake, made by pulverizing oats, barley, or rye, alone or together, with the addition, after they have been exposed to a degree of fermentation, of aromatic herbs. It is an alcohol rather than a wine, and is consumed by the Chinese in large quantities.

— Taffain, an Italian histologist, recommends a new coloring agent. He takes a saturated solution of aniline blue, another of picric acid, and mixes them in the proportion of four parts of the former to one hundred of the latter. With this mixture he stains his microscopic preparations, obtaining a beautiful green tint, which he considers very advantageous.

— The *Journal of Inebriety* mentions two cases in which dipsomania was caused by tape-worm. So soon as the animal was dislodged all craving for alcohol disappeared.

— A new periodical under the name *Archiv für Geschichte der Medicin und medicinische Geographie*, has appeared in Germany. The first number contains an article by Dr. Bass, and dedicated to the third centenary of William Harvey.

BOSTON LYING-IN HOSPITAL.

SERVICE OF DR. W. L. RICHARDSON.

[REPORTED BY DR. J. B. SWIFT, HOUSE PHYSICIAN.]

Chorea of Pregnancy. — M. C., single, twenty-three, primipara, entered the hospital May 16th to await confinement, with the following history: when a child she was greatly frightened at being lifted up to kiss a corpse, and was immediately seized with a universal chorea. This continued in spite of treatment, being at times so severe that she had to be fed. When fourteen years of age the catamenia appeared, and the chorea rapidly subsided, finally disappearing entirely. Last September she became pregnant, and in November noticed that the chorea was returning. As pregnancy advanced the choreic movements increased, though they were confined chiefly to the left side of the body, and were especially noticeable in the left arm. On her entrance to the hospital the nervous symptoms above described were very marked. The heart's action was irregular. Labor began the evening of May 21st. The twitchings were very much increased, especially during the pains, which were not very strong or frequent. During the second stage the progress of the labor became slower, and the pains were feeble. Five grains of the sulphate of cinchonidia were given, soon after which the pains increased in strength, and the labor was rapidly terminated. She was delivered of a male child at ten A. M. on May 22d, and at one P. M. all signs of the chorea had disappeared, except a slight twitching of the little finger of the left hand, which passed off the next day. The heart's action was now regular.

May 24th the confinement of a woman in the next bed excited her somewhat, and the chorea returned in the left arm. She was given twenty grains of bromide of potassium, which quieted her, and the nervous symptoms ceased.

May 26th. Report reads, "Has no choreic movements except when nervous or excited."

June 2d. Sat up for the first time. No sign of chorea; heart's action regular. The child had marked hypospadias.

Two other cases very similar to the above have occurred at the hospital. A report of them may be found in the JOURNAL of July 12, 1877. In all three the choreic symptoms were intensified during the labor, and in all the chorea ceased soon after the birth of the child. In this case various remedies were tried during the pregnancy with a view of relieving the chorea, but with no lasting effect. Chloral at one time and valerianate of zinc at another apparently afforded a slight temporary relief; but the effect was only for a few days, at the end of which time the nervous symptoms would return as bad as ever. At the period of quickening there seemed to be such a decided improvement in the chorea for about ten days that it was thought possible that it might be going to leave her entirely. The remission was, however, only temporary.

Ante-Partum Hæmorrhage; Low Attachment of Placenta; High Forceps; Puerperal Fever; Death.—April 5th. A. L., nineteen, single, seven months pregnant with her first child, entered the hospital. Says that yesterday afternoon without any apparent cause she commenced flowing. She had had no pain; the discharge was pure blood, about a teacupful in amount. This morning she had come about forty miles in the cars, and the flowing had returned, but not so much as yesterday. Examination per vaginam showed the cervix still present, though soft, the external os admitting the tip of the finger; head felt presenting. Nothing like placental tissue could be felt through the walls of the uterus. Rest in bed ordered.

April 6th. There has been no flowing since entrance, but there is a very offensive, purulent discharge from the vagina. Warm carbolized vaginal douches ordered.

April 7th. No discharge. Says she feels perfectly well. The next day she returned home to await labor pains.

May 15th. Reëntered, as she did not care to remain at home. Has had no return of the flowing or discharge.

May 19th. At 11.30 A. M., while lying on her bed, she suddenly commenced flowing, without any apparent cause. Examination showed the vagina filled with clots, the os about the size of a quarter dollar, the head presenting, and very little liquor amnii. The finger, passed through the os, detected the edge of the placenta low down on the posterior side of the cervix. Pulse 88, of good character. She was ordered to remain quiet in bed. 1.30 P. M. The flowing has increased and labor pains have come on. Os about the same size as at previous examination. The urine was drawn with a catheter, and a colpeurynter was introduced, which checked the hæmorrhage and caused the pains to increase in force and frequency. 2.15. P. M. The colpeurynter was removed, the patient etherized, the os dilated by hand, the membranes ruptured, the long forceps applied inside the uterus, and the labor terminated. The placenta was expressed by Credé's method. Perinæum intact. There was considerable post-partum hæmorrhage. Friction over abdomen with hand, ice-water douche, and ice to vulva soon produced firm uterine contraction. The patient came out of the ether well, and was given a drachm of the fluid extract of ergot. This being vomited, another dose was given per rectum. The baby did not breathe, but artificial respiration, rubbing the body with alcohol, and hot and cold baths in about half an hour caused lively movements and loud cries.

An examination of the placenta showed the following state of things: there was the placental mass of ordinary size, and extending from this a small mass of placental tissue consisting of five distinct lobes, which were arranged in a pyramidal form, the apex being down. This was attached just inside the os.

May 20th. A. M., pulse 112; temperature 101°. The patient passed a comfortable night, and reports herself feeling nicely. P. M., pulse 130; temperature 102°. Lochia offensive. Carbolized douches were ordered. Sulph. cinchonidiæ grs. v. every two hours for three doses.

May 21st. A. M., pulse 116; temperature 102°. Abdomen tender. Poultice applied over the abdomen. Sulph. cinchonidiæ grs. v. every four hours. P. M., pulse 118; temperature 101.5° Tinnitus aurium. Cinchonidia omitted.

May 22d. A. M., pulse 125; temperature 102°. P. M., pulse 130; temperature 101°. Diarrhœa. Ol. ricini, half an ounce, was ordered.

May 23d. A. M., pulse 132; temperature 100.5°. No milk in breasts. Lochia normal. Abdomen tender and tympanitic. Turpentine stupes. A turpentine enema caused a large fecal defecation. Pil. quin. sulph. grs. ii. every three hours. Diet, milk and lime-water, with a drachm of brandy every hour. Abdominal poultices. P. M., pulse 132; temperature 100° (axilla). Lochia offensive. Considerable nausea after food. Breath has a sweetish odor. Nutritive enemata. Complete isolation with separate nurses, syringes, etc. 10.30 P. M. Nausea continues, with retching. Morph. sulph. one eighth of a grain hypodermically over stomach checked the retching.

May 24th. 5.30 A. M. The patient has been quite comfortable all night, though she has not slept any. Vomiting has returned, the vomitus being black. Morph. sulph. one eighth grain subcutaneously again checked it. Since 2.30 she has had five defecations. Pulse 160, feeble. From this time she gradually failed, and at 8.40 A. M. died. No autopsy.

The child left the hospital May 27th, well, but was reported to have died of convulsions a week later.

Epilepsy. — E. B., married, twenty, entered the hospital in advanced labor with the second child the evening of May 23d, and within an hour was delivered of a male infant, so that her previous history was not obtained. The bladder being empty, the urine could not be examined. The labor was easy and the patient passed a comfortable night. The next morning she complained of severe after-pains, for which she received twenty drops of the fluid extract of ergot with ten drops of laudanum every two hours until relieved. At 2.45 that afternoon she asked for the bed-pan, as she desired to pass her urine. While on the bed-pan she was seized with a convulsion. Ether was immediately administered, and a drachm of the fluid extract of jaborandi given per rectum, which in twenty minutes was followed by profuse diaphoresis. About two ounces of urine were drawn with a catheter, and examined with the following result: faintly acid, light colored, specific gravity 1008; albumen one fourth per cent.; pus; no casts. Ether was stopped, and as soon as the patient could swallow she was given potas. brom. grs. xx., chloral hydrate grs. xv., morph. sulph. one sixth grain, with digitalis fomentations over the kidneys. She soon vomited, and in half an hour the medicine was repeated. This again seemed to act as an emetic, and the patient immediately vomited a large amount of yellowish frothy fluid. She came out of the ether well, was conscious, answered questions, and extended either hand when asked to. She turned in bed of her own accord, and complained of severe headache.

On inquiry it was learned that at noon she had passed about three pints of urine, and in the bed-pan, which was under her at the time of the convulsion, thirteen ounces of urine were found, which was not examined, as it was mixed with lochia. She was ordered twenty grains of the bromide of potassium every four hours, the urine to be drawn and measured every six hours. At midnight the urine was drawn; twelve ounces, acid, specific gravity 1018: traces of albumen; small amount of pus and blood.

May 25th. Six A. M. Urine, nineteen ounces, acid, specific gravity 1014;

no albumen. The husband was called last night, and stated that she always had had good health, so far as he knows, except that on two or three occasions she had had a kind of fit, which she soon got over.

The bromide was continued for four days, and then reduced to twenty grains, three times a day.

On May 30th she had an attack of subacute cystitis, which soon passed off. The patient says that she has always been well. When she was fifteen years old her catamenia first appeared, and soon after this she had a "fainting spell" one morning soon after rising, and thinks that she was unconscious about five minutes. Since then she has had several similar attacks. They have all come on just after waking from a sleep, and are followed by a severe headache. During her first pregnancy she had no trouble, but while carrying this child, when seven months along, she says that she had a fit similar to this last one.

Her convalescence since has been uninterrupted, and she left the hospital June 6th, well.

That the convulsion in this case was of epileptic origin was determined from the examination of the urine taken in connection with the quantity passed just before and soon after the attack. The subsequent headache and characteristic stupor also served as guides in forming the diagnosis, which was subsequently confirmed by the patient's past history.

SHORT COMMUNICATIONS.

A CASE OF TRAUMATIC ANOSMIA AND AGEUSIA, WITH PARTIAL LOSS OF HEARING AND SIGHT; RECOVERY IN SIX WEEKS.¹

BY T. M. ROTCH, M. D.

D. N., a laborer, aged fifty years, while wheeling sand from the hold of a ship fell from a staging, a height of fifteen feet, on to a hard cemented wharf, striking on the left side of his head. According to the report of his daughter, a girl of a good deal of intelligence, there was no cut on his head, but the scalp was much swollen, and his left eye was entirely closed by the swelling caused by the blow on the left side of his face. He vomited a considerable quantity of blood soon after the accident, and has since continued to spit blood; just after he was put to bed, on being carried home, blood was noticed to trickle from his right ear.

October 27th. I first saw the patient eighteen days after the injury, he having been confined to his bed by his bruises up to that date. He is a well-built, intelligent man; mind perfectly clear. His parents were healthy, and he himself has always been well and strong, with the exception of an attack of typhoid fever and rheumatism some years ago. He gives no history of syphilis or of nasal catarrh in either the acute or chronic form. Previous to his fall his senses of taste and smell were, so far as he knows, perfect. He has always been able to see and hear well. Since his fall he has been unable to taste or smell anything; has noticed that his hearing was affected; for some days he could not see objects distinctly, and now cannot see to read. He has had no paralysis. Epistaxis was quite frequent, and always from the left nostril. At times he spits up dark clotted blood. Since the accident he has been drowsy and stupid, but is gradually getting brighter. At present he suffers from great soreness all over his head, especially at the base of the skull behind and at the sides, so that any movement of the head is quite painful, the neck being kept straight and stiff. Pulse and temperature normal. Appetite poor. Bowels regular. Sleeps well. An examination of the head showed that the blow was in the region of the anterior superior angle of the left parietal bone, extending down the anterior border of the bone for about

¹ Read before the Boston Society for Medical Observation.

one and a half inches. Percussion and auscultation revealed nothing abnormal about the chest, the blood which he raised apparently coming from the posterior nares. The patient is able to walk, but his head feels light and dizzy. His eyes being closed, a drop of vinegar was placed on his tongue; he knew that something was on his tongue, but he was unable to say whether it was sour or sweet. In like manner he failed to recognize a saturated solution of sugar. He could tell the difference between heat and cold on his tongue, and the difference in feeling between the finger and a spoon.

October 29th. Two days later, the nose was examined with the following results: There was no deviation of the septum; the mucous membrane of the septum and middle turbinated bones was somewhat reddened and swollen, especially on the left side, where in the region of the middle turbinated bone a small clot of blood was noticed. The examination of the posterior nares was found to be almost impossible, as the patient was unable to open his mouth wide, the jaw being stiff; nothing abnormal was detected. The sound was not passed, for fear of renewing the epistaxis. With the left nostril the patient was unable to perceive tincture of assafœtida, oil of wintergreen, oil of peppermint, or sulphuric ether, even when introduced well into the nose. The right nostril could not perceive assafœtida, oil of wintergreen, or sulphuric ether, but the oil of peppermint produced a sensation; that is, he felt something in the nostril, but he could not say that it was a smell. The expressed juice of an onion placed on the tongue merely gave a tactile sensation; no flavor whatever was noticed. Sugar felt a little cold; salt was not recognized, even when he was told what it was. He states that he cannot distinguish one kind of food from another, and that, in fact, his food has no taste whatever.

October 30th. The left nostril failed to recognize assafœtida, oil of wintergreen, oil of peppermint, or sulphuric ether, but recognized for an instant ammonia, which caused him great satisfaction; the right nostril also perceived the ammonia, while the sulphuric ether and oil of peppermint produced an indefinite sensation, but no smell. Assafœtida and oil of wintergreen produced no sensation whatever. Onion juice, salt, and sugar were not distinguished. Vinegar had for an instant a slightly sour taste, but he could not recognize it as vinegar. Sulphate of quinine for an instant tasted slightly bitter.

Examination of the ears gave the following results: The tuning-fork carried from side to side was heard best in the left ear; placed on the vertex of the skull it was heard most clearly in the right ear. The watch could be heard two inches from the right ear, three and a half inches from the left ear. The voice was heard well with the left ear, not clearly with the right; there was considerable sebum in both ears, so as to mask the membrana tympani. The right ear was syringed, when the membrana tympani was found to be cloudy and thickened in its lower two thirds, while its upper third and the head of the malleus were much reddened, giving the appearance of an ecchymosis. The tuning-fork could now be best heard in the right ear, while on the vertex of the skull it was most clearly perceived in the left ear; on syringing the left ear, however, the same difference was noticed as before syringing either ear, the left hearing much better than the right. The watch could now be heard at the distance of four inches from the right ear, and the patient expressed himself as much relieved from the heavy, dull feeling which he had had in his ear.

Examination of the eyes. The patient has always been somewhat hypermetropic, but has been able, so far as he knows, to see as well with his left eye as with his right; has never had any pain in his eyes. For some days after his injury he was unable to distinguish objects with his left eye, but can now do so pretty well; but cannot read print of moderate size with this eye, although he can do so with his right eye when the book is held at a distance of twelve inches. The fundus of the right eye presented nothing abnormal. A physiological excavation was present. There appeared to be some redness and puffiness of the left optic disk; nothing else abnormal was noticed. From this time until November 11th the derangements of smell, taste, sight, and hearing continued to grow less, the patient becoming stronger under tonic treatment.

November 11th. Dr. C. H. Williams kindly examined the eyes, and reported that nothing abnormal was to be found, with the exception of their being hypermetropic; he explained the derangement of vision in the left eye by a disturbance of its accommodating power, caused by the blow on that side of the head.

The tuning-fork was now heard equally well in both ears; a whisper could be heard at a distance of three or four yards, and the ticking of a watch at twenty-four inches. The membrana tympani of both ears was normal, excepting that it was somewhat thickened.

November 12th. Forty-three days from the time of the injury, the patient comes to office, a distance of a mile. He states that when he first went out, nine days ago, he could not hear the rattle of the carts in the street as a distinct sound, but only, to use his own words, as a "dead rumble;" he now hears distinctly. He has had no more epistaxis, and has ceased to spit blood. Examination of the nose revealed nothing abnormal in the right nostril, some slight swelling in the left; he can distinguish equally well with both nostrils tincture of assafoetida, oil of wintergreen, oil of peppermint, sulphuric ether, and ammonia. Can taste his food; recognizes wine and salt, and says that vinegar tastes sour, but he does not know what it is. He is unable to taste or smell onion juice. The induced current of a Gaiffé battery was passed through the tongue and nose for five minutes, when, on again testing, it was found that he could both taste and smell the onion juice perfectly; and on trying him a month later, when he was well and working, he recognized the onion juice, and stated that he had been able to do so from the time of the application of the electricity.

COMPARATIVE MORTALITY-RATES.

	Estimated Population, July 1, 1878.	Deaths during week ending July 18, 1878.	Annual Death-Rates per 1000 living.		
			For the Week.	For the Year 1877.	Mean for ten Years, '68-77
New York.	1,093,171	741	35.24	23.42	28.71
Philadelphia.	876,118	428	25.40	18.80	21.54
Brooklyn.	549,438	309	29.24	21.51	25.50
Chicago.	460,000	226	25.55	17.83	22.39
Boston.	375,476	175	24.23	20.10	24.34
Providence.	100,000	49	25.48	18.81	19.20
Lowell.	55,798	29	27.03	19.09	22.50
Worcester.	54,937	16	15.15	14.07	22.30
Cambridge.	53,547	16	15.53	18.69	20.83
Fall River.	53,207	22	21.50	21.35	24.96
Lynn.	35,528	11	16.11	20.42	19.67
Springfield.	33,981	11	16.84	16.02	19.77
Salem.	27,140	10	19.16	20.38	21.15

BOOKS AND PAMPHLETS RECEIVED. — The Functions of the Anal Sphincters, so-called. By James R. Chadwick, M. D. (Reprint from Volume II., Gynæcological Transactions. 1877.)

Amputations and Excisions of the Cervix Uteri; their Indications and Methods. By J. Byrne, M. D., M. R. C. S. E., etc. (Reprint from Volume II. Gynæcological Transactions. 1878.)

Address to the Graduates of the Medical College of the State of South Carolina at the Annual Commencement, March 5, 1878. By C. Richardson Miles, one of the Trustees. Charleston, S. C. 1878.

Annual Announcement of the Medical College of South Carolina, 1878-79.

Cyclopaedia of the Practice of Medicine. By Dr. H. von Ziemssen. Vol. XIII. Diseases of the Spinal Cord and Medulla Oblongata. By Professor Wilhelm Heinrich Erb, of Heidelberg, Baden. Translated. New York: William Wood & Co. 1878. (H. D. Brown & Co., 67 Cornhill, Boston, New England Agents.)

Neuralgia, and its Modern Therapeutics. By James B. Baird, M. D. Atlanta. (Reprint from the Transactions of the Medical Association of Georgia.)

Eleventh Annual Announcement of the Bennett Medical College, Chicago, Illinois, 1878-79.

Annual Announcement of the Department of Medicine and Surgery of the University of Michigan for 1878-79.